NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Permittee Name: The City of Elko
1755 College Avenue
Elko, NV 89801

Permit Number: NEV20014

Location: City of Elko Wastewater Reclamation Facility
1600 STP Road
Elko, Elko County, Nevada 89801
Township 34N, Range 55E, Section 21

Latitude: 40° 49' 10" N
Longitude: 115° 47' 20" W

Bureau of Corrective Actions:
There are no Bureau of Corrective Actions sites within 1 mile of the subject facility.

Drinking Water Protection Area / Wellhead Protection Area:
The subject facility is within the 6000 foot, but outside the 3000 foot Drinking Water Protection Area (DWPA) around one public water supply well owned by the City of Elko (Well 30). The subject facility is not within a currently established Wellhead Protection Area (WHPA).

General:
The treatment plant is located at 1600 STP Road, southwest of the city of Elko, Nevada. Since the previous permit renewal, numerous repairs and improvements have been made to the facility, including, but not limited to, relining of the equalization basin, lining of an emergency storage pond, upgrades to the SCADA control system, and replacement of the effluent force main.

The Elko Water Reclamation Facility (WRF) disposes secondary-treated effluent and geothermal water by infiltration via 11 percolation ponds, also known as Rapid Infiltration Basins (RIBs), City of Elko irrigation reuse, and irrigation/dust control at numerous other reuse sites, including the Miller ranch. Two-225 million gallon capacity storage reservoirs contain effluent to be used for irrigation, and are also used for emergency effluent storage. Stored effluent is used for irrigation and may be used for construction reuse. Spent geothermal water generated during use of high temperature (186° F) water as a building heat source is discharged for percolation at the WRF ponds.

Rapid Infiltration Basins (RIBs) include 1A, 1B, 2A, 2B, 3A, 3B, 4A, and 4B. Additionally, RIBs 8A, 8B, and 8C were completed in 2010 downgradient of RIBs 4A and 4B, in the area previously used for irrigation under the designation North Center Pivot.

Effluent Flow and Characteristics:
Permit flow limits for the wastewater treatment plant are 4.5 MGD, 30-day average, and 5.1 MGD, daily maximum. The flow limit for the geothermal discharge is 0.25 MGD, 30-day average. During the period from January 2005 through June 2010, the following effluent characteristics were reported:

Parameter		*Permit Limit*	Average	Maximum	Minimum
Flow (MGD):	30-Day Average	***4.5***	2.73	3.95	2.06
	Daily Maximum	***5.1***	2.96	4.59	2.17
$CBOD_5$ (mg/l):	30-Day Average	***30***	11	19.3	6.01
	Daily Maximum	***45***	14.7	42.6	6.04
BOD_5 (mg/l):	30-Day Average	***M&R***	14.89	32.2	7
	Daily Maximum	***M&R***	20.54	55	8.8
TSS (mg/l):	30-Day Average	***30***	13.2	24.8	5.5
	Daily Maximum	***45***	17.78	50.6	7.4
pH (S. U.):		***6.0 to 9.0***	7.7	8.26	6.93
Total P (mg/l):		***M&R***	2.79	7.4	0.4
Total N (mg/l)		***M&R***	19.99	35	12
TKN (mg/l):		***M&R***	12.51	24	3.6
Nitrate (mg/l)		***M&R***	6.21	9.2	3
Nitrite (mg/l)		***M&R***	1.05	6.9	0.02
Ammonia (mg/l)		***M&R***	11.01	24	3.5
Fecal Coliform (CFU or MPN/100 ml)					
	30-Day Geo. Mean	***23***	1.82	15.2	<1
	Daily Maximum	***240***	8.15	164	<1

MGD:	Million Gallons per Day
$CBOD_5$:	5-Day Carbonaceous Biochemical Oxygen Demand
BOD_5:	5-Day Biochemical Oxygen Demand
M&R:	Monitor and Report
TSS:	Total Suspended Solids
S.U.:	Standard Units
P:	Phosphorus
N:	Nitrogen
TKN:	Total Kjeldahl Nitrogen
Geo. Mean:	Geometric Mean

Receiving Water Characteristics:
Groundwater monitoring is required. Groundwater is monitored in eight (8) monitoring wells, located near the RIBs and storage reservoirs. Near the storage reservoirs, depth to groundwater ranges from approximately 123 feet below ground surface (bgs) upgradient to 70 feet bgs downgradient. Wells 007-1 (upgradient) and wells 007-2 and 007-3 monitor groundwater near the storage reservoirs. Downgradient wells L1, L3, and L4 and upgradient wells L8 and L10 monitor groundwater in the vicinity of the RIB galleries. Near the RIBs, groundwater is encountered at approximately 15 feet bgs upgradient to 14 feet bgs downgradient. During the period from January 2005 through June 2010, groundwater monitoring results have shown no significant decrease in water quality due to disposal/ reuse practices. Groundwater in the vicinity of disposal/reuse area is of good quality, with Total Nitrogen ranging from 1.5 to 1.8 mg/l, Nitrate ranging from 1.2 to 1.7

mg/l and Chloride ranging from 19 to 37 mg/l.

Description of the Location of the Discharge:
The authorized outfalls are as follows:

001: Treated effluent from the Facility via evaporation/percolation ponds;
002: Spent geothermal water via the percolation/cooling ponds at the Elko WRF site;
003: Ruby View Golf Course, separately permitted under Permit 2003515;
004: Elko County Fairgrounds, separately permitted under Permit NEV2007509;
005: Elko Land Application Sites, North Center Pivot and South Center Pivot;
007: Property surrounding the effluent Storage Reservoirs in the SW1/4, Sect. 6, T.33N., R.55E;
008: Bruce Miller Ranch (160 Acre Parcel), separately permitted under NEV99006
009: Bruce Miller Ranch (135 Acre Parcel), separately permitted under NEV99006
011: Elko Municipal Airport; and
012: Construction site reuse.

Proposed Effluent Limitations and Monitoring Requirements:
The discharge shall be limited and monitored according to the following:

Outfall 001: Treated Effluent

Table I.A.1: Monitoring Requirements for Outfall 001

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Maximum	Sample Locations	Measurement Frequency	Sample Type
Flow (MGD)	4.5	5.1	Influent	Continuous	Meter or Calculate
BOD_5 (mg/l)	30	45	Effluent	Weekly	Composite
	M&R	M&R	Influent	Weekly	Composite
Total Suspended Solids (mg/l)	30	45	Effluent	Weekly	Composite
	M&R	M&R	Influent	Weekly	Composite
pH (Standard Units)	---	6.0 to 9.0	Influent & Effluent	Weekly	Discrete
Total Phosphorous as P (mg/l)	Monitor & Report		Effluent	Monthly	Composite

MGD: Million Gallons per Day
M&R: Monitor & Report
mg/l: Milligrams/liter
Influent flow is specified and limited in Table 1. All effluent flows and destinations shall be metered, or calculated, and reported quarterly.

Outfall 002: Spent Geothermal Water

Table I.A.2: Monitoring Requirements for Outfall 002

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30 - day Average	Daily Maximum	Sample Locations	Measurement Frequency	Sample Type
Flow (MGD)	0.40	---	Geothermal Discharge	Continuous	Meter
Geothermal Discharge (See below)	Monitor & Report		Geothermal Discharge	Annually in 4th Quarter	Discrete

Report in the 4th Quarter Discharge Monitoring Report. Geothermal discharge water shall be sampled in December of each year and analyzed for the following constituents:

pH (field measurement)	calcium	manganese
electrical conductivity (field measurement)	chloride	nitrate
temperature (field measurement)	copper	potassium
total dissolved solids	fluoride	sodium
arsenic	iron	sulfate
barium	magnesium	

The analytical method selected must have detection limits at or below drinking water standards. Report in appropriate units.

Outfall 003-005, 007-009, 011-012: Effluent Reuse

Table 3: Monitoring Requirements for Outfalls 003-005, 007-009, 011-012

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30 - day Average	Daily Maximum	Sample Locations	Measurement Frequency	Sample Type
Flow (MGD)	M&R	---	Each Reuse Site	Continuous	Meter
Total Nitrogen as N (mg/l)	M&R	M&R	Effluent	Monthly	Calculate
Nitrate as N (mg/l)	M&R	M&R	Effluent	Monthly	Composite
Nitrite as N (mg/l)	M&R	M&R	Effluent	Monthly	Composite
Ammonia as N (mg/l)	M&R	M&R	Effluent	Monthly	Composite
Fecal Coliform (CFU or MPN/100 ml)	23	240	Effluent	Twice/Week	Discrete

Total Nitrogen as N = Total Kjeldahl Nitrogen as N + Nitrate as N + Nitrite as N

Groundwater Monitoring:

Groundwater shall be monitored in wells, L1, L3, L4, L8, L10, 007-1, 007-2, and 007-3, as well as any future wells, according to the following:

Table 4: Groundwater Monitoring Requirements

Parameter	Limitations	Frequency	Sample Type
Depth to Groundwater (feet)	Monitor & Report	Quarterly	Discrete
Groundwater Elevation(feet AMSL)	Monitor & Report	Quarterly	Calculate
Total Nitrogen as N (mg/l) [(1)]	10.0	Quarterly	Calculate
Nitrate as N (mg/l)	Monitor & Report	Quarterly	Discrete
Nitrite as N (mg/l)	Monitor & Report	Quarterly	Discrete
Chlorides (mg/l)	Monitor & Report	Quarterly	Discrete
Total Dissolved Solids (mg/l)	Monitor & Report	Quarterly	Discrete

Total Nitrogen as N = Total Kjeldahl Nitrogen as N + Nitrate as N + Nitrite as N
AMSL = Above Mean Sea Level
(1.) See Permit Parts I.A.10. & I.A.11.

Schedule of Compliance:
The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance.

a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.

b. **By MMM DD, 2011**, the Permittee shall submit for review and approval a revised Operations and Maintenance (O&M) Manual for the Reuse Sites/RIBs to the following address:

Department of Conservation and Natural Resources
Nevada Division of Environmental Protection
Bureau of Water Pollution Control
ATTN: Compliance Coordinator
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701

Proposed Determination:
The Division proposes to reissue this permit for a five-year period.

Rationale for Permit Requirements:
Monitoring is required to assess the level of treatment being provided and to determine when design capacity is being approached.

Effluent limitations for BOD_5, total suspended solids, and pH are consistent with Secondary Treatment requirements required by NAC 445A.243. Nitrogen sampling from the effluent stream provides data for annual balancing of nitrogen uptake by plant crops. Fecal coliform testing is required to provide an additional tool for evaluating the protection of human health in the irrigation

and dust control reuse areas. All other monitoring requirements, such as those for the geothermal waste stream, were included in the City of Elko's current discharge permit, and continue to be carried through to be protective of groundwater.

Groundwater monitoring is required to demonstrate that the discharge is protective of the receiving water as a drinking water source, and for assurance that this facility is not in violation of the State's policy to maintain the quality of the waters of the state.

Procedures for Public Comment:

The Notice of the Division's intent to renew a permit authorizing the facility to discharge secondary-treated effluent into groundwaters of the State, subject to the conditions contained within the permit is being sent to the **Reno Gazette Journal** and the **Elko Daily Free Press** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. All written comments are to be hand-delivered, postmarked (via mail) or transmitted to the Division via fax or e-mail **by 5:00 P.M. on April 7, 2011.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Janine O. Hartley, P.E.
Draft: March 2010
Final: